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piece 1, NC_000913, yifN_rep-, config: linear, direction: -, begin: 3958729, end: 3958464

Sequence alignment diagram showing a protein sequence with various mutations and annotations. The top part shows the sequence with codons and amino acids. Below it, a red circle highlights a mutation at position 3958670. A green bracket indicates a deletion of three amino acids (Ile-Phe-Glu) starting at position 3958670. A blue bracket indicates a insertion of two amino acids (Asp-Cys) starting at position 3958670. A red arrow points to a p10 2.3 bits annotation.

cd p10 2.3 bit

p35 3.7 bits

```
{ -  
| -
```

----} p35-(23)-p10 3958686
----} p35-p10 3958686 total

The sequence logo illustrates the conservation of amino acids across 10 homologous proteins. The x-axis represents positions 1 through 50. The y-axis lists amino acids: fMet, asn, val, thr, ala, cys, lys, pro, leu, thr, gly, trp, leu, arg, met, phe, lys, ser, glu, arg, glu, asp, arg, asn, arg, ser, ser. Red dots indicate positions where the amino acid is conserved across all 10 proteins.

5' t c g t q a a t c c a t t a g a c t t a g a a a a t a t c g g g t c g t a a c g t t g t g t a t t a c t t t t c a g a g t t a c t a a g g a g g t t a 3'

... fMet - asn - pro - leu - asp - leu - glu - asn - ile - gly - ser - ... fMet - leu - leu - leu - phe - gln - ser - leu - leu - arg - arg - gly - leu - ...

ir yifN_rep- [###] orf 12 codons sc

p10 3.1 bits



p35 3.8 bits

35 2.4 bits

p10 3.1 bits

 p10 3.4 bits
p35-(2) p35-p1
p35-(22)-p10 3958504 Gap 2.3 bits
p35-p10 3958504 total 4.9 bits

```
{-----} p35-(23)-p10 3958531 Gap 1.4 bits  
|-----| p35-p10 3958531 total 4.0 bits {-----}
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```
-----} p35-(23)-p10 3958489 Gap 1.4 bits  
-----} p35-p10 3958489 total 6.2 bits  
-----} p35-(22)-p10 3958504 Gap 2.3 bits  
-----} p35-p10 3958504 total 4.9 bits
```

The diagram illustrates the structure of a tRNA precursor. It features two mature tRNA genes, *3958480 and *3958470, which are shown as blue and red boxes at the top. Below these genes, the flanking genomic DNA sequence is represented by a pink box. The mature tRNA genes are indicated by blue and red arrows pointing downwards, representing the 5' to 3' direction of the RNA. The flanking genomic DNA sequence is also indicated by a pink arrow pointing downwards. The entire precursor is bounded by 5' and 3' ends, marked with asterisks (*).

```
... ----- } sd-(13)-ir 3958483 Gap 4.6 bits  
... ----- | sd-ir 3958483 yifN_rep- total 7.7 bits  
... ----- | ..... NC 000913.yif
```



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